

**REMARKS**

Applicants respectfully request entry of the foregoing Amendment. Upon entry of the Amendment, claims 1, 3-6, 8-11, 14 and 15 would be pending in the application with claims 1, 14 and 15 being the independent claims. Claims 2, 12 and 13 are proposed to be cancelled. Claims 14 and 15 are proposed to be added. Claims 1, 10 and 11 are proposed to be amended.

Applicants respectfully request that this Amendment under 37 C.F.R. § 1.116 be entered by the Examiner, placing all the claims in condition for allowance. The proposed amendments of claims 1, 10 and 11 do not raise new issues or necessitate the undertaking of any additional search of the art by the Examiner, since all of the elements and their relationships claimed were either earlier claimed or inherent in the claims as examined. Therefore, this Amendment should allow for immediate action by the Examiner.

Furthermore, Applicants respectfully point out that the final action by the Examiner presented some new arguments as to the application of the art against Applicants' invention. It is respectfully submitted that the entering of the Amendment would allow the Applicants to reply to the final rejections and place the application in condition for allowance.

**Rejections Under 35 U.S.C. § 112**

The Examiner rejected claim 10 under 35 U.S.C. § 112, second paragraph as being indefinite. Applicants propose to amend claim 10 to recite the gas velocity as being equal to or higher than 500 m / sec. Accordingly, the rejection would be rendered moot. Applicants respectfully request that the Examiner withdraw this rejection.

### Rejections Under 35 U.S.C. § 102

The Examiner rejected claims 1 and 8-11 under 35 U.S.C. § 102(b) as anticipated by JP 409251981A to Kurihara *et al.* (Kurihara). Claim 1 defines a processing apparatus comprising a gas supply mechanism that supplies a processing gas into a processing chamber via a plurality of gas supply holes including a plurality of primary gas supply holes and a plurality of circulating gas supply holes, an evacuating mechanism that evacuates the processing gas from said processing chamber, and a gas circulating mechanism that returns at least a portion of exhaust gas evacuated from said processing chamber to said gas supply mechanism. The gas supply mechanism includes a primary gas supply system that supplies primary gas supplied from a processing gas source into said processing chamber via said primary gas supply holes, and a circulating gas supply system that supplies at least a portion of the exhaust gas into said processing chamber via said circulating gas supply holes with said primary gas supply system and said circulating gas supply system constituted as systems independent of each other, and wherein the ratio of the number of said primary gas supply holes and the number of said circulating gas supply holes is set equal to the ratio of a target flow rate for said primary gas and a target flow rate for said circulating gas, wherein the hole radius and the hole density of said gas supply holes are constant over the entire surface.

Applicants propose to amend claim 1 to include all the features of claim 2, and to additionally include a recitation of "primary gas supply holes" instead of "gas supply holes." More particularly, claim 1, as proposed, recites that the hole radius and the hole

density of the primary gas supply holes are constant over the entire surface. Such a configuration enables the primary supply gases to be supplied at the same, constant flow rate through all the primary gas supply holes, providing for uniform distribution of the primary gas. Kurihara fails to teach or suggest any apparatus in which the hole radius and hole density of primary gas supply holes are constant over the entire surface. Accordingly, Kurihara fails to disclose the invention as claimed.

Kurihara discloses a semiconductor manufacturing system that includes a chemical cylinder 111 which supplies process gas to a vacuum tube (sic) 101 through a nozzle. A turbo molecular pump 105 is connected to the vacuum tube 101, and a recycle line 107 extends between the exhaust side of the pump 105 and the vacuum tube 101. See Kurihara, paragraph 11. A nozzle, as shown in FIG. 5, includes an equal number of holes for gas flow from a recycle line 107 and gas flow of the process gas supply from the chemical cylinder 111. FIG. 5 shows the holes from the recycle line being located at one side of the nozzle and the holes from the process gas supply being located at the other side of the nozzle. Accordingly, the hole radius and hole density of the primary gas supply holes are not constant over the entire surface, as recited in claim 1.

Claim 1, as proposed to amended herein, is patentable over Kurihara for at least the reasons set forth above. Applicants respectfully request that the Examiner reconsider and withdraw this rejection.

Claims 8-11 depend from and add additional features to independent claim 1, and claims 8-11 are patentable for at least the reasons set forth above with regard to claim 1.

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### **Rejections Under 35 U.S.C. § 103**

The Examiner rejected claims 2-6 and 12-13 under 35 U.S.C. § 103 as unpatentable over Kurihara. Applicants have proposed to cancel claims 2, 12 and 13. Claims 3-6 depend from claim 1.

Claim 1, as proposed, recites the subject matter of claim 2, in addition to a new recitation of "primary" gas supply holes. For the reasons set forth above, proposed claim 1 is patentable over Kurihara.

Claims 3-6 depend from and add additional features to independent claim 1. As such, claims 3-6 are patentable for at least the reasons set forth above. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of these claims.

### **New Claims**

Claims 14 and 15 are new claims. Kurihara does not teach or suggest a system as claimed in claims 14 and 15. Accordingly, claims 14 and 15 are patentable over Kurihara. Applicants respectfully request that the Examiner consider claims 14 and 15 and pass them to allowance.

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**Conclusion**

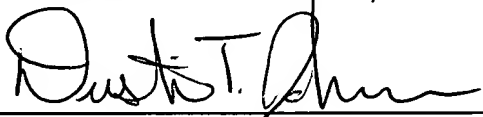
Each of the objections and rejections have been overcome, traversed or otherwise rendered moot. Accordingly, the present application is now in a condition for allowance. Applicants respectfully request that the Examiner enter this Amendment, and reconsider and withdraw all the objections and rejections in this application.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

**AMENDMENTS TO THE CLAIMS**

Please cancel claims 2, 12 and 13.

Please add new claims 14 and 15.

Please amend claims 1, 10 and 11 as follows:

1. (Twice Amended) A processing apparatus comprising:

a gas supply mechanism that supplies a processing gas into a processing chamber via a plurality of gas supply holes including a plurality of primary gas supply holes and a plurality of circulating gas supply holes,

an evacuating mechanism that evacuates the processing gas from said processing chamber, and

a gas circulating mechanism that returns at least a portion of exhaust gas evacuated from said processing chamber to said gas supply mechanism,

wherein said gas supply mechanism includes,

a primary gas supply system that supplies primary gas supplied from a processing gas source into said processing chamber via said primary gas supply holes, and

a circulating gas supply system that supplies at least a portion of the exhaust gas into said processing chamber via said circulating gas supply holes with said primary gas supply system and said circulating gas supply system constituted as systems independent of each other, and

wherein the ratio of the number of said primary gas supply holes and the number of said circulating gas supply holes is set equal to the ratio of a target flow rate for said primary gas and a target flow rate for said circulating gas, and

wherein the hole radius and the hole density of said primary gas supply holes are constant over the entire surface.

10. (Twice Amended) A processing apparatus according to claim 1, wherein the [rate at which said primary gas is supplied through] gas supply mechanism is configured to provide the primary gas at the outlet of said primary gas supply holes into said processing chamber [is set] at a velocity equal to or higher than 500 m / sec.

11. (Amended) A processing apparatus according to claim 1, wherein the [rate at which said circulating gas is supplied through] gas circulating mechanism is configured to provide said circulating gas at the outlet of said circulating gas supply holes into said processing chamber [is set] at a velocity equal to or higher than 500 m / sec.

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